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BOOK REVIEW

A Field Guide to the Beetles of North America.—Richard E. White. Houghton-Mifflin, Boston. 368 pp. $10.95 (paper).

White has produced a masterful field guide to the Coleoptera, brimming with more than six hundred illustrations of the quality we have come to expect from the co-author (with Donald J. Borror) of *A Field Guide to the Insects* (also of the Peterson series by Houghton-Mifflin). White's book could not have been more timely. It is a first, surpassing other attempts at North American field guides for the beetles, and is a badly needed source of information for amateurs who now cannot purchase copies of Arnett's *Beetles of the United States* or Crowson's *A Natural Classification of the Families of Coleoptera.* It cannot be said to replace either, but it serves an immediate identification need by non-specialists and students in college courses, as well as offering a useful pocket guide for the professional entomologist. Before extolling any more virtues of the tome, let me dispense with the problems I have found in it.

Some of my complaints are genuine errors, pulled from some groups of special interest to me, and I can only assume that comparable ones exist in treatments of other taxa. Others, however, including the families chosen and the taxa included in them, are more a matter of preference. In the book, White adopts a conservative classification that overlooks many relations that now seem well established. For example, the genus *Dasycerus* is included in the Lathridiidae (as was traditionally the case, e.g., Leng, 1920), ignoring its placement in the Staphylinoidea by Crowson (1955) and masking its fascinating relationships that almost certainly lie within Staphylinidae (Wheeler, 1984).

The discussion of the numbers of North American species and biological habits of the major genera of Leiodidae are essentially correct in the text (the "powdery fungus" being Myxomycetes: Blackwell, 1984), but the figures are mislabeled. A drawing of what appears to be *Anisotoma discolor* (Melsheimer) is labeled as "*Leiodes*" and a *Leiodes* sp. as "*Anisotoma.*" The nomenclatural problems of these two genera are sufficiently monumental to justify White's mistake, and I suspect that the national collection may still be organized in the outmoded classification (see Hatch, 1929).

The family name Lymexylonidae is used instead of the grammatically correct Lymexylidae (Barber, 1952). Just as in the case of Cerylonidae (cf. Cerylidae; Kuschel, 1979) the root does not include the -on ending on the genus name (*Lymexylon, Cerylon*). This, like the previous problem, is with published precedent and is not a serious problem. I found that I could key out the lymexylid genus *Hylecoetus* in the picture key on the front and rear endpapers, but its antennal structure is at odds with the text description (p. 214). *Melittomma,* on the other hand, agrees with the text, but does not easily key out. Also, the lymexylids are described simply as wood-boring, overlooking their fascinating symbiotic relationship with ambrosia fungi that predates comparable habits in scolytine weevils and may well represent the earliest evolution of truly fungus-growing habits in the Coleoptera (Wheeler, ms; Wilson, 1971).

The literature cited at the end of the book excludes Roy A. Crowson's classic *Biology of the Coleoptera* (1981, Academic Press). I realize that Crowson's book

probably appeared after the "guide" had gone into production, but a note in proof of so important an addition to the literature on beetles would have been fully justifiable. And finally, I was a little amused and disappointed by the drawing of a compound microscope boldly crossed out in the book. While it is not advisable for an aspiring amateur beetle collector to run down to her local department store and purchase a compound microscope, no one interested in beetles should be turned from compound microscopy. Much of the detailed work necessary to adequately describe small external structures, many genitalia and mouthparts, and many larvae can only realistically be done with compound microscopy, and the general quality of beetle taxonomy would only benefit from more widespread application of compound microscopy by professional taxonomists and their user community.

I guess that many years have gone by since I purchased my last copy of Borror and White's insect field guide, and I was shocked to learn that the paperback edition has more than doubled to nearly eleven dollars.

Most of the complaints that I have can be mitigated by an honest look at the size of the project that White has completed. In North America alone there are more than 30,000 species of beetles, and there is no way that the brief write-ups possible in a field guide can do justice to all of them. Also, the field of coleopterology is rapidly changing and no truly "up to date" publication of this scope is possible. As an illustration, the associations of Eucinetidae with fungi were largely assumed at the time of White's writing, and in the interval North American species have been associated with boletes, wood-rotting Basidiomycetes, and slime molds, confirming and adding to our knowledge of mycophagy in that primitive polyphagan family (Wheeler and Hoebeke, 1984). The illustrations are superb. The blurbs on each family are concise and largely accurate. The introductory chapters are helpful, and the discussion of collecting methods includes more than the standard, general techniques. An expanded treatment of the morphology of beetles would have been helpful, but given the scope and goals of the volume, the existing balance seems reasonable. Finally, the physical production of the book is good, surpassing that of some competing field guide series.

I consider this the best available book for the beginning student of beetles. It is extremely valuable in its own right, and will always be a useful companion to other books (such as Arnett and Crowson, when these again become available). My copy is already showing a little wear, and I suspect that a new generation of coleopterists will benefit from this professionally prepared volume. I recommend the book highly, and offer a thanks to Dr. White for his timely contribution.—*Quentin D. Wheeler, Department of Entomology, Cornell University, Ithaca, New York 14853.*

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